

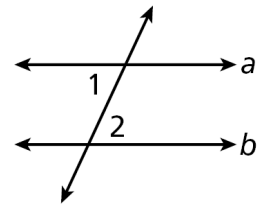
Attendance Problems.

1. If $\triangle ABC \cong \triangle DEF$, then $\angle A \cong$ _____ & $\overline{BC} \cong$ _____.

2. What is the distance between (3, 4) & (1, 5)?

3. If $\angle 1 \cong \angle 2$, why is $a \parallel b$?

4. List the methods used to prove two triangles congruent.



I can use CPCTC to prove parts of triangles are congruent.

Vocabulary: CPCTC

Common Core

CC.9-12.G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and prove relationships in geometric figures.

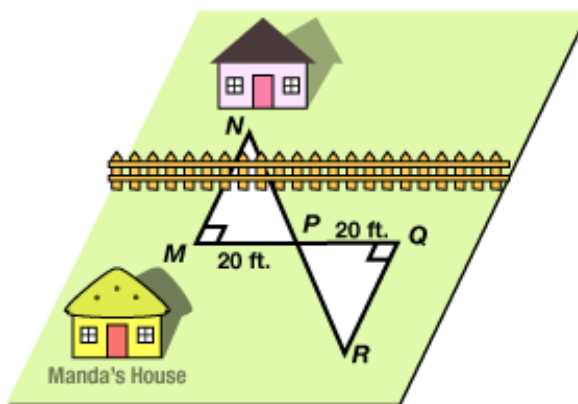
CC.9-12.G.MG.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).*

CPCTC is an abbreviation for the phrase “Corresponding Parts of Congruent Triangles are Congruent.” It can be used as a justification in a proof after you have proven two triangles congruent.

Remember!

SSS, SAS, ASA, AAS, and HL use corresponding parts to prove triangles congruent. CPCTC uses congruent triangles to prove corresponding parts congruent.

Video Example 1. Manda wants to know the distance between her front door and her neighbor's. She located points P, Q, and R. How can she find MN?



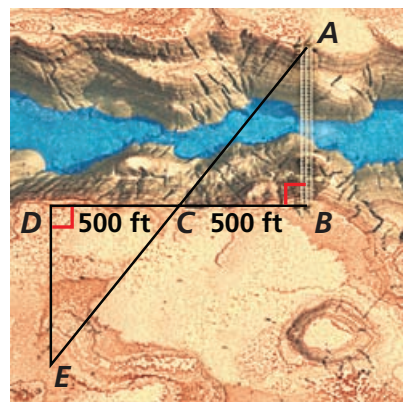
1 Engineering Application

To design a bridge across a canyon, you need to find the distance from A to B. Locate points C, D, and E as shown in the figure. If $DE = 600$ ft, what is AB ?

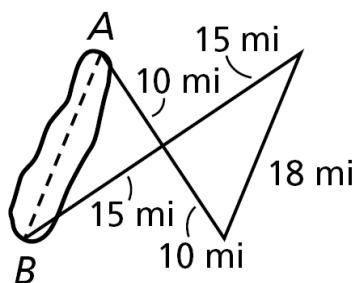
$\angle D \cong \angle B$, because they are both right angles.

$\overline{DC} \cong \overline{CB}$, because $DC = CB = 500$ ft.

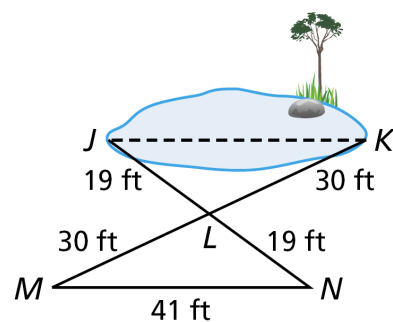
$\angle DCE \cong \angle BCA$, because vertical angles are congruent. Therefore $\triangle DCE \cong \triangle BCA$ by ASA or LA. By CPCTC, $\overline{ED} \cong \overline{AB}$, so $AB = ED = 600$ ft.



Example 1. A and B are on the edges of a ravine. What is AB?



5. Guided Practice. A landscape architect sets up the triangles shown in the figure to find the distance JK across a pond. What is JK ?



4-7 Triangle Congruence: CPCTC

(pp 271) 7, 16a, 16c, 17, 18, 22, 23.

(pp 277) 4-8.